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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Bernhard DE VRIES et al. Attn: PCT Branch

Application No. New U.S. National Stage of PCT/EP03/01121

Filed: July 13, 2004 Docket No.: 120399

For: KETONE PEROXIDE COMPOSITIONS

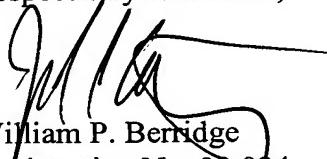
**SUBMISSION OF THE ANNEXES TO THE
INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Attached hereto is the annexes to the International Preliminary Examination Report (Form PCT/IPEA/409). The attached material replaces the claims.

Respectfully submitted,


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Date: July 13, 2004

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Claims

1. A composition of a ketone peroxide comprising

- a) a peroxide derivative of the formula



wherein

R₁ is a branched or unbranched alkyl group with 1 to 4 carbon atoms or alkenyl group with 2 to 4 carbon atoms; and

R₂ is a branched or unbranched alkyl or alkenyl group with 5 to 12 carbon atoms; and

- 10 b) a branched or unbranched hydrocarbon solvent;

the peroxide derivative of a) having a solubility more than 40 g in 100 g of the solvent of b) at 20°C; and

comprises less than 10 wt.% of a peroxide derivative of the formula



wherein R₁ and R₂ have the previously given meanings.

2. The composition of claim 1 wherein R₁ and R₂ are alkyl groups.

- 20 3. The composition of claim 2 wherein R₁ is a methyl group and R₂ is an isoamyl or amyl group.

- 25 4. The composition of any one of claims 1-3 wherein the solvent is a saturated aliphatic hydrocarbon.

5. A composition of a ketone peroxide derived bis-peroxyester, bis-peroxycarbonate, or mixed peroxyester-peroxycarbonate comprising
- a) a ketone peroxide derived bis-peroxyester, bis-peroxycarbonate, or mixed peroxyester-peroxycarbonate derivative of the formula



wherein

R₁ is a branched or unbranched alkyl group with 1 to 4 carbon atoms or

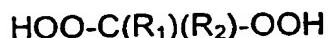
alkenyl group with 2 to 4 carbon atoms; and
R₂ is a branched or unbranched alkyl or alkenyl group with 5 to 12
carbon atoms; and
R₃ is independently selected from a branched or unbranched alkyl
group with 1 to 12 carbon atoms, alkenyl group with 2 to 12 carbon
atoms; and an aromatic group with 6-12 carbon atoms.
n is independently 0 or 1, and

- 5 b) a branched or unbranched hydrocarbon solvent;
and
10 comprising less than 10 wt.% of a peroxide derivative of the formula
R₃[O]_nC(O)OO-C(R₁)(R₂)-OO-C(R₁)(R₂)-OOC(O)[O]_nR₃,
wherein R₁, R₂, R₃, and n have the previously given meanings.

6. A composition of a ketone peroxide derived monoperoxyester or
monoperoxycarbonate comprising
15 a) a ketone peroxide derived monoperoxyester or monoperoxycarbonate
derivative of the formula
HOO-C(R₁)(R₂)-OOC(O)[O]_nR₃
wherein
20 R₁ is a branched or unbranched alkyl group with 1 to 4 carbon atoms
or alkenyl group with 2 to 4 carbon atoms; and
R₂ is a branched or unbranched alkyl or alkenyl group with 5 to 12
carbon atoms; and
R₃ is selected from a branched or unbranched alkyl group with 1 to 12
25 carbon atoms, alkenyl with 2 to 12 carbon atoms; and an aromatic
group with 6-12 carbon atoms;
n is 0 or 1, and
b) a branched or unbranched hydrocarbon solvent;
and
30 comprising less than 10 wt.% of a peroxide derivative of the formula
HOO-C(R₁)(R₂)-OO-C(R₁)(R₂)-OO C(O)[O]_nR₃,

wherein R₁, R₂, R₃, and n have the previously given meanings.

7. A process for the preparation of a peroxide derivative of the formula



5 wherein

R₁ is a branched or unbranched alkyl group with 1 to 4 carbon atoms or alkenyl group with 2 to 4 carbon atoms; and

R₂ is a branched or unbranched alkyl or alkenyl group with 5 to 12 carbon atoms;

10 comprising the step wherein a ketone of the formula O=C(R₁)(R₂), wherein R₁ and R₂ have the previously given meanings, is reacted with hydrogen peroxide in a branched or unbranched hydrocarbon solvent in the presence of an acidic catalyst.

- 15 8. A method for the preparation of the composition of any one of claims 1-4 by using the process according to claim 8.

9. Use of the composition of any one of claims 1-6 for polymerizing vinylchloride, (meth)acrylic monomers, styrene, ethylene, or mixtures 20 thereof, for curing unsaturated polyester or vinylester resins, for grafting monomers onto a polymer, for crosslinking a polymer or for degrading a polymer.